



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D119-646-041
Job Sheet 190014



Part No: D119-646-041

Job Qty: 1 ea

Part Name: AW119 Replacement Skidtube with Wearpads



Part Weight: 0 lbs

Priority: Medium

Job Created: 2/4/19

Due Date: 4/5/19

Type: SOLD

Note: DWG IIN-D119-646 REV D,
by:EC IPP rev B 10.02.22 per
675) DD verf:JLM IPP REV:D 1,
D3887 rev.e DD verf:JFS

10,11 IPP RevA: New Issue DD verified
IPP REVC 12.11.05 (DEOD3887-B-1)(ecn 12-
13-534 DD verf:JLM IPP REV:E 17.05.19 as per dwg

Ship Via:



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S150739



Part: D119-646-041

Job No: 190014

Serial No/Batch: S150739

Revision:

Inspector:

Exp Date:

Instructions: FAA STC SR02024SE 18/10/17, EC STC LoA P.

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		4/5/19	0.00	0.00	Start Up Skid tubes-1		MGB
110	Skid tubes	1 pcs		4/5/19	0.00	0.25	Skid tubes-1		MGB
120	HandFinish	1 pcs		4/5/19	0.00	0.83	HandFinish1		M 14-02-07
121	QC	1 pcs		4/5/19	0.00	0.00	QC7-1		BB
122	QC	1 pcs		4/5/19	0.00	0.00	QC5		BB
130	Skid tubes	1 pcs		4/5/19	0.00	1.54	Skid tubes-1		MGB
135	QC	1 pcs		4/5/19	0.00	0.00	QC5		BB
140	Skid tubes	1 pcs		4/5/19	0.00	1.47	Skid tubes-1 MGB #1-2		MGB
150	QC	1 pcs		4/5/19	0.00	0.00	QC5		BB
160	Skid tubes	1 pcs		4/5/19	0.00	1.61	Skid tubes-1		BB
170	QC	1 pcs		4/5/19	0.00	0.00	QC5		BB
180	QC	1 pcs		4/5/19	0.00	0.00	QC10		BB
190	HandFinish	1 pcs		4/5/19	0.00	0.83	HandFinish2		BB
200	Powdercoat	1 pcs		4/5/19	0.00	0.22	Powdercoat1		BB
210	QC	1 pcs		4/5/19	0.00	0.00	QC3		BB
220	HandFinish	1 pcs		4/5/19	0.00	3.83	HandFinish4		BB
240	HandFinish	1 pcs		4/5/19	0.00	2.00	HandFinish4		BB
245	QC	1 pcs		4/5/19	0.00	0.00	QC5		BB
255	DC	1 pcs		4/5/19	0.00	0.00	DC		BB
260	Packaging	1 pcs		4/5/19	0.00	0.00	Packaging3-1		BB
270	QC21-FG	1 Ea		4/5/19	0.00	0.00	QC21		BB

Part Op 110 - 1- inspect Mat'L D2500-1-190 for damage 2-Cut tube to length as per dwg D3887 (154.8") 3- Ensure squareness of Descriptions: ends and scribe batch#

130 - 1- Install drill Jig DT9477 drill X-bolt spacer pilot holes using 3/16" drill first side only. 2- 2nd side, locating from first saddle holes use DT9861 A/B to drill 2nd side fwd saddle holes. 3- 2nd side locating from fwd saddle drill remaining crossbolt spacer holes using DT9477 4- Open crossbolt spacer holes to finished size as per dwg D3887 (section D-D and E-E) ***DO NOT OPEN FWD Saddles Holes*** 5- Deburr, blow out chips from inside of tube. 6- Bond web in place as per Dwg D3887 & QSI 015. A/R S 128 386 exp 03-07-19

140 - 1- Bend FWD end of tube using bender 1 and FOLIO 31 bend prog. D3887. ***Must use bending aid DT9544, ensure proper positioning*** 2- Cut FWD end of tube as per dwg D3887. ***Verify measurement*** 3- Buff out marks left from bending 4- Drill FWD cap holes using DT8215. Open FWD & AFT cap holes to 0.208" 5- Open FWD saddle holes to finished size as per dwg D3887 6- Drill FWD x-bolt spacer holes using DT9816 and open to finished size. (verify measurement) 7- Drill Tow ring hole, using DT10047 locate from FWD saddle hole. (verify measurement). Open to finished size. 8- Drill 1.87" and 3.74 holes using DT10045 A&B locate from FWD saddle hole. (verify measurement) as per dwg. 9- C'sink FWD cap hole as per detail "C" 10- Drill holes for wearpads using DT8931, open to 0.297". 11- Countersink crossbolt spacer holes, and prepare tube for welding, deburr. 12- Deburr and blow out chips from inside of tube.

160 - NOTE: TACK IN 2 MOST FWD X-BOLT SPACERS AND TEST FIT FWD GROUND HANDLING FIXTURE, IF FIXTURE FITS WELL THEN PROCEED. FIXTURE DT10091. 1-Insert crossbolt spacers. Weld as per QSI 004 and Dwg D3887. Remember to back drill each hole before welding the other side. Use aluminum rod A/R 2-Grind cross bolt welds flush as per Dwg D3887. Ensure no pin hole. 3-Counterbore 5/16" x 0.750" deep as per Dwg D3887. 4- Deburr & Scribe batch # on Aft end of tube.

170 - TEST FIT USING FIXTURE DT10091.

190 - Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

200 - ***MASK AREA SHOWN ON SHEET 7, NOTE 9*** START TIME: 8:30 OVEN TEMPERATURE:

320° FINISH TIME: 9:00

220 - 1-Install inserts as per Dwg D3887.

240 - 1-Install inserts as per Dwg D3887. 2-Install wearpads, gaskets as per Dwg D3887. Put sikaflex in insert before installing bolts and washers A/R Sikaflex-240/-291 Sikaflex expire date: 3-assemble o'ring to plug as per dwg D3492 and apply o'ring lube A/R 55-o'ring lube batch: 4 -Inspect for foreign objects as per QSI 024 5 -Install D2855-3 Cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291

Sikaflex expire date: 6 -Install insert in D2855- Cap. Install cap and seal with Sikaflex. Clean excess adhesive. A/R Sikaflex-240/-291 Sikaflex expire date: 7- Wing Walk as per dwg and QSI Batch:

255 - Photocopy bluefile & type labels per PPP D119-646-041 CHG005

DAS
15
9-89

5 2019

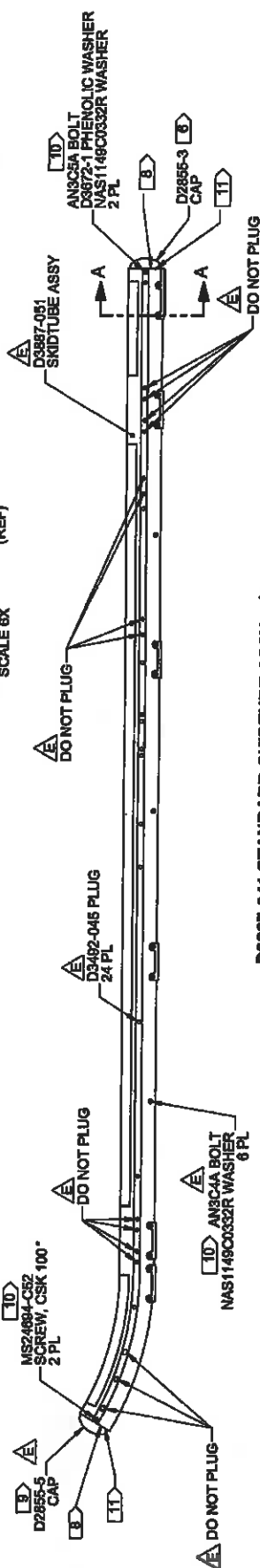
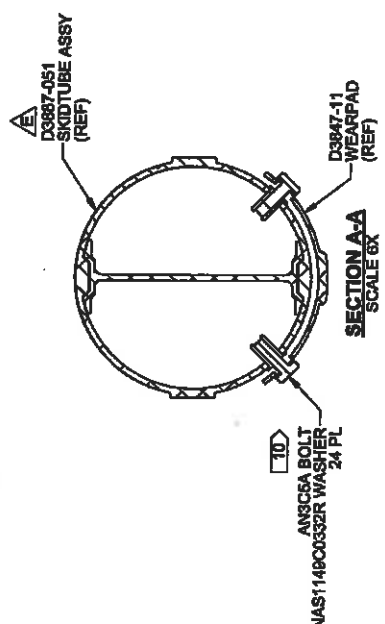
Job BOM					008577
Part / Item	Component Name	Quantity	Operation	Container	
D2500-1-190	Ext'n -1' Beam Tube 4"	1 pcs (1 ea)	90-Start up Operation	5112963	
D3885-1	Standard Web	1 pcs (1 ea)	130-Skidtubes	5083677	
D2579	Crossbolt Spacer	2 pcs (2 ea)	140-Skidtubes	5097840	
D2855-5	Cap	1 pcs (1 ea)	160-Skidtubes	5002070	
D3681-1	Spacer	12 pcs (12 ea)	160-Skidtubes	5110487	
D3903-1	Spacer	12 pcs (12 ea)	160-Skidtubes	5144256	
ALS4-1032-130	Rivnut	33 Ea (33 ea)	240-HandFinish	5067771	
ALS4-1032-225	Rivnut	1 Ea (1 ea)	240-HandFinish	5058138	
AN3C4A	Bolt	6 Ea (6 ea)	240-HandFinish	5152638	
AN3C5A	Bolt	26 Ea (26 ea)	240-HandFinish	5078999	
D2855-3	Cap	1 pcs (1 ea)	240-HandFinish	5126403	
D3492-5	Plug	24 pcs (24 ea)	240-HandFinish	5137521	
D3672-1	Washer, Phenolic	2 pcs (2 ea)	240-HandFinish	5184209	
D3847-1	Wearpad	5 Ea (5 ea)	240-HandFinish	* 5142046	
D3847-11	Wearpad	1 Ea (1 ea)	240-HandFinish	5105239	
MS24694-C52	Screw	2 Ea (2 ea)	240-HandFinish	5067269	
NAS1149C0332R	Washer	32 Ea (32 ea)	240-HandFinish	5140515	
NAS1611-005	O-Ring	24 Ea (24 ea)	240-HandFinish	5150256	
Job Allocations					
Operation	Component Part	Required	Inventory	Allocated	
90-Start up Operation	D2500-1-190	1	43	0	
130-Skidtubes	D3885-1	1	10	0	
140-Skidtubes	D2579	2	124	0	
160-Skidtubes	D2855-5	1	55	0	
	D3681-1	12	240	0	
	D3903-1	12	187	0	
240-HandFinish	ALS4-1032-130	33	10,022	0	
	ALS4-1032-225	1	709	0	
	AN3C4A	6	1,817	0	
	AN3C5A	26	1,119	0	
	D2855-3	1	33	0	
	D3492-5	24	98	0	
	D3672-1	2	1,943	0	
	D3847-1	5	63	0	
	D3847-11	1	16	0	
	MS24694-C52	2	94	0	
	NAS1149C0332R	32	5,027	0	
	NAS1611-005	24	241	0	
Part Specifications					
Specifications could not be found.					

Plex 2/4/19 10:44 AM dart.white.jesse

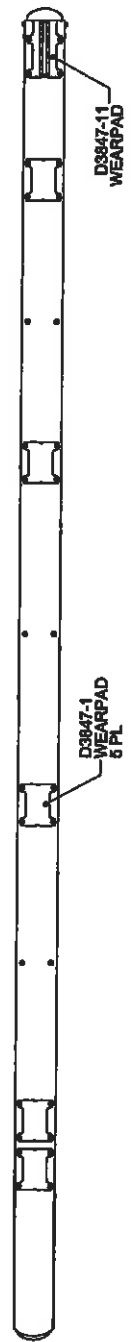


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2017-05-08

ITEM	QTY -441	P/N	DESCRIPTION
1	1	D3887-041	STANDARD SKIDTUBE ASSY WITH WEARPAD
2	1	D2855-3	CAP ASSY
3	24	D3492-045	PLUG ASSY
4	2	D8672-1	PHENOLIC WASHER
5	5	D3847-1	WEARPAD
6	1	D3847-11	WEARPAD
7	1	D3887-051	SKIDTUBE ASSY
8	1	ALSA-1032-225	INSERT
9	28	AN3CSA	BOLT
10	6	AN3C-4A	BOLT
11	2	MS24894-C52	SCREW, CSK 100°
12	32	NAS1148C0332R	WASHER



D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD



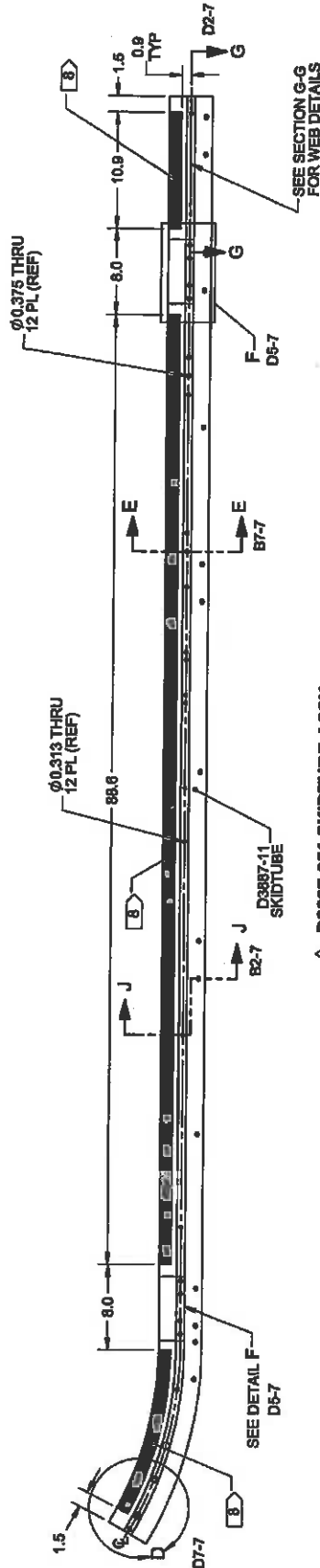
- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3887-041" AND BATCH NUMBER PER QSI 044 8.4 ON THE ID OF THE TUBE, BEFORE INSTALLING THE APT D2865-3 CAP
 - 7) WEIGHT: 32.0 lbs
 - 8) RELIEVE INNER RIDGE OF EXTRUSION, AS NEEDED, TO ALLOW FOR INSTALLATION OF D2855-3 AND D2855-5 CAP ASSY. ALODINE BARE MATERIAL
 - 9) USE D3887-051 SKIDTUBE ASSY TO LOCATE AND BACKDRILL UNDRILLED INSERT HOLE INTO D2865-5 CAP. OPEN HOLE TO 0.020" ALODINE BARE MATERIAL, AND INSTALL ALSA-1032-225 (OR AKS7-1032-225, OR AKS4-1032-225, OR AKS4-1032-225) INSERT ON INSIDE OF CAP.
 - 10) SEAL FASTENERS WITH SIKAFLEX -241/291 OR PROSEAL 880 OR MIL-S-8802 CLASS B2 SEALANT
 - 11) SEAL MATING SURFACES WITH SIKAFLEX -241/291 OR PROSEAL 880 OR MIL-S-8802 CLASS B2 SEALANT

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DESIGN	RF	DART AEROSPACE USA, INC.
DRAWN	WK	ELBENE, OR
CHECKED	RF	
MFG. APPR.	DD	DRAWING NO. D3887
APPROVED	HS	TITLE
DE APPR.	DS	A119 STD SKIDTUBE ASSY
DATE	17.02.03	SCALE NTS

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ITEM	QTY -001	P/N	DESCRIPTION
1	X	D3887-001	SKIDTUBE ASSY
2	2	D2579	CROSS BOLT SPACER
3	12	D3881-1	CROSS BOLT SPACER
4	1	D3885-1	STANDARD WEB
5	1	D3887-11	SKIDTUBE
6	12	D3883-1	CROSS BOLT SPACER
7	30	ALS4-1032-130	INSERT

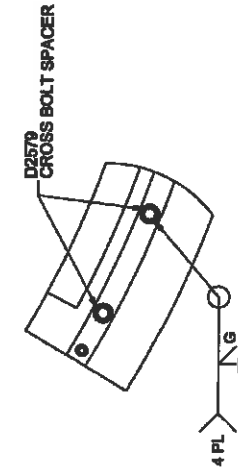


D3887-001 SKIDTUBE ASSY
(WELDING DETAIL)

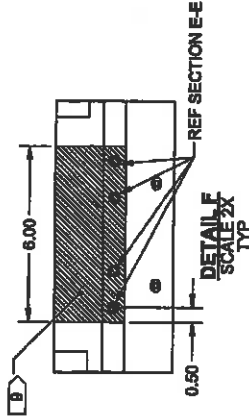
- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: POWDER COAT WHITE (4.3.5.1) PER DART OSI 005.4.3
 - 3) TOLERANCES: PER DART OSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: IDENTIFY AT NEXT ASSEMBLY
 - 7) WEIGHT: N/A
 - 8) AFTER APPLICATION OF FINISH, PAINT TOP SURFACE OF SKIDTUBE WITH MIL-W-5044 ANTI-SKID PAINT (WING WALK) AS INDICATED TO 0.50 ABOVE LOCATION RIDGE, PER OSI 005 SECTION 4.4

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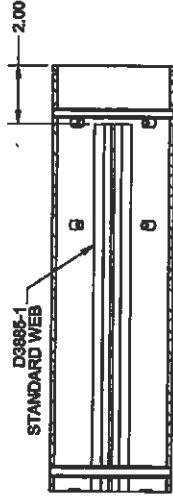
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CHECKED	RF	DRAWING NO. D3887
MFG. APPR.	DD	REV. E SHEET 5 OF 11
APPROVED	H8	TITLE
DE APPR.	DS	A119 STD SKIDTUBE ASSY
DATE	17.02.03	SCALE NTS



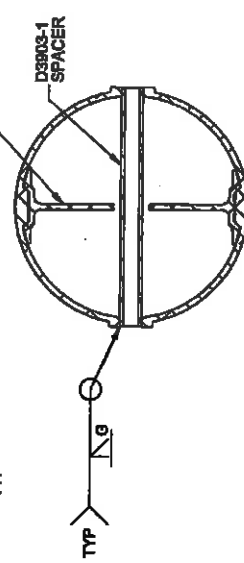
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SCALE 2X
TYP



DETAIL F
SCALE 2X
TYP

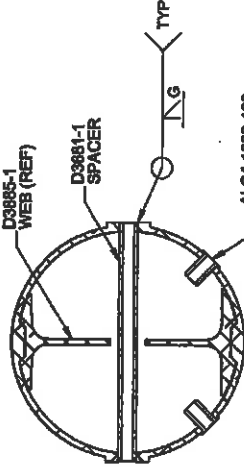


SECTION G-G
SCALE 2X
TYP



SECTION E-E
SCALE 6X
TYP

(FOR 12X $\phi 0.375$ HOLES
PER SKIDTUBE)



SECTION J-J
SCALE 6X
TYP

(FOR 12X $\phi 0.313$ HOLES
PER SKIDTUBE)

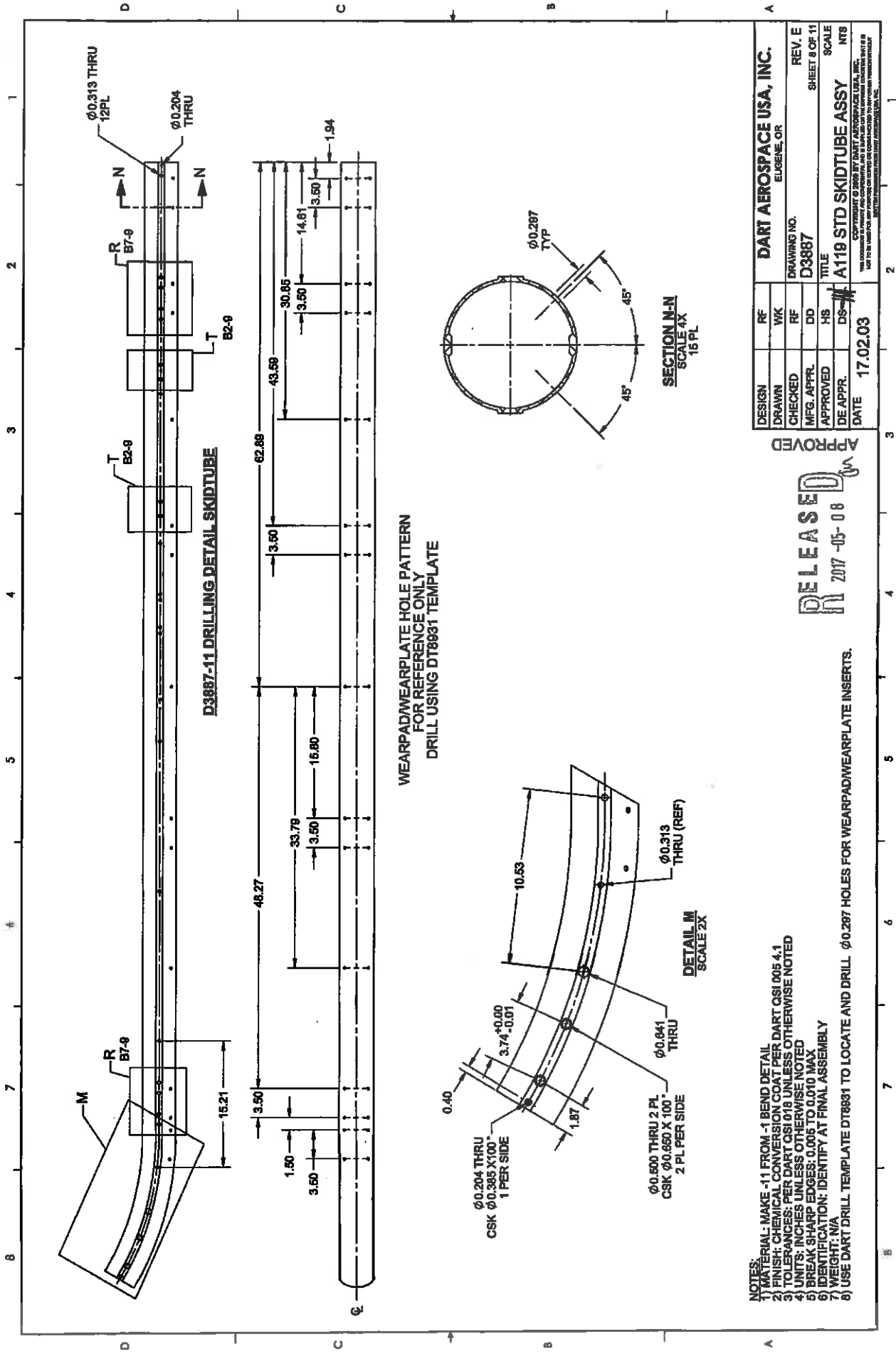
- NOTES:
- 1) MATERIAL: N/A
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
 - 7) WEIGHT: N/A
 - 8) INSERT D3885-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/291 ADHESIVE PER DART QSI 015 AFTER BENDING. ENSURE HOLES LINE-UP
 - 9) MASK THIS AREA AND DO NOT POWDER COAT
 - 10) AFTER DRILLING AND BENDING ASSEMBLY, PERFORM THE FOLLOWING FOR THE SECTION E-E $\phi 0.375$ HOLES ONLY:
 - i) CHAMFER HOLES $\phi 0.475 \times 45^\circ$
 - ii) INSERT D3803-1 SPACER
 - iii) WELD INTO PLACE AND GRIND FLUSH
 - iv) CHORE TO $\phi 0.313 \times 0.75$ DEEP
 - v) DEBURR HOLES
 - 11) AFTER DRILLING AND BENDING ASSEMBLY, PERFORM THE FOLLOWING FOR THE SECTION J-J $\phi 0.313$ HOLES ONLY:
 - i) CHAMFER HOLES $\phi 0.354 \times 45^\circ$ OR 0.050 DEEP $\times 45^\circ$ (BOTH SIDES)
 - ii) INSERT D3881-1 SPACER
 - iii) WELD INTO PLACE AND GRIND FLUSH
 - iv) DEBURR HOLES
 - 12) WELD PER DART QSI 004

DESIGN	RF	WK	DATE	17.02.03
DRAWN	RF	WK	DRAWING NO.	D3887
CHECKED	RF	WK	TITLE	A119 STD SKIDTUBE ASSY
MFG. APPR.	DD	DD	SCALE	NTS
APPROVED	HS	HS	REV. E	SHEET 7 OF 11
DE APPR.	DS	DS	DATE	17.02.03

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EUGENE, OR

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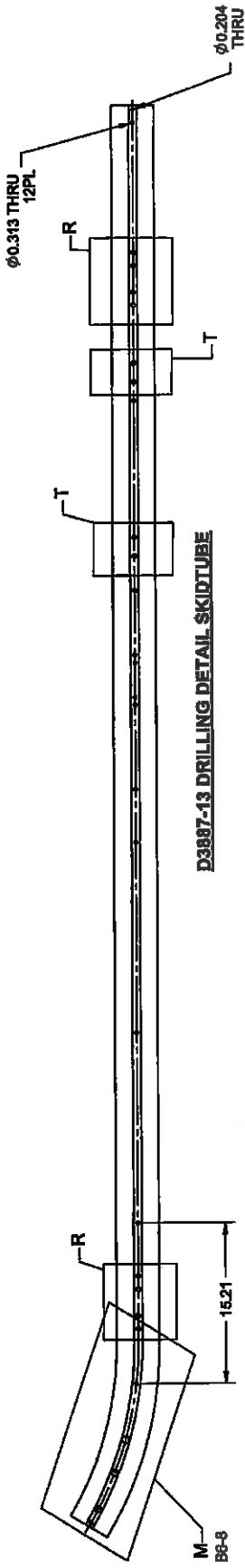


DESIGN	RF	WK	RF	REV. E
DRAWN	RF	RF	RF	DRAWING NO. D3887
CHECKED	RF	RF	RF	SHEET 8 OF 11
MFG. APPL.	DD	DD	DD	TITLE
APPROVED	HS	HS	HS	A119 STD SKIDTUBE ASSY
DE APPR.	DS	DS	DS	SCALE
DATE	17.02.03	17.02.03	17.02.03	NTS

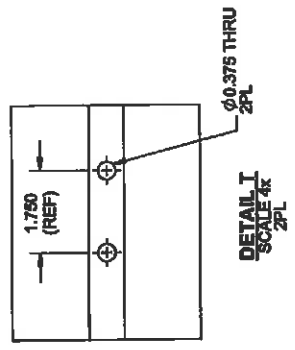
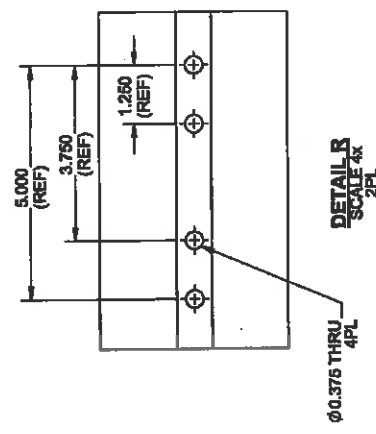
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1 2 3 4 5 6 7 8



D3887-13 DRILLING DETAIL SKIDTUBE

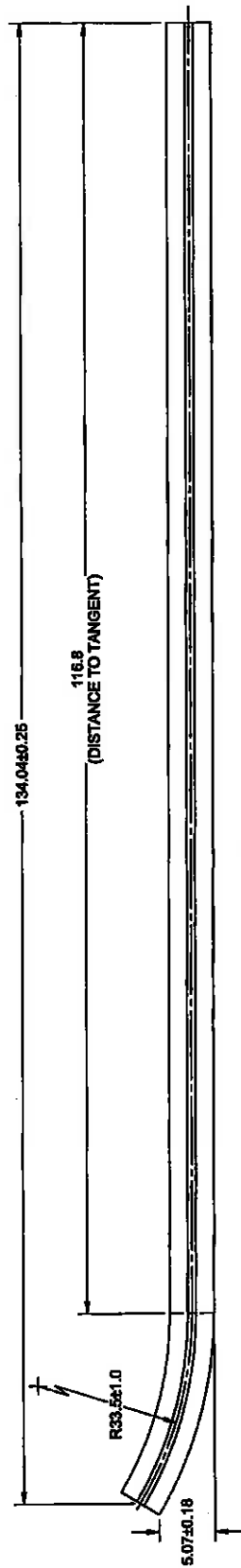


- NOTES:
- 1) MATERIAL: MAKE -13 FROM -1 BEND DETAIL
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
 - 7) WEIGHT: N/A

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DESIGN	RF	WK	
DRAWN			
CHECKED	RF		
MFG. APPR.	DD		
APPROVED	HS		
DATE	17.02.03		
REV. E			
D3887			
SHEET 9 OF 11			
SCALE			
A119 STD SKIDTUBE ASSY			
NTS			
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1 2 3 4 5 6 7 8



D3887-1 BEND DETAIL SKIDTUBE

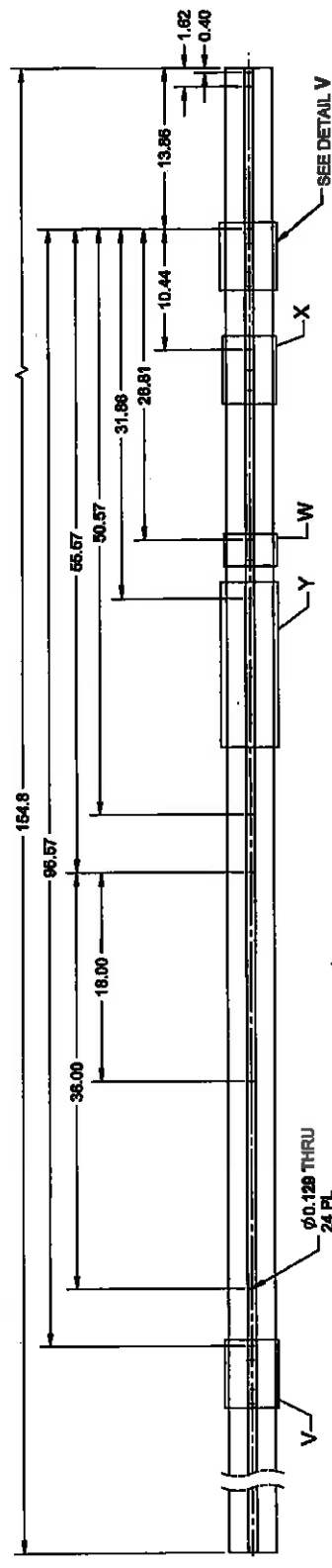
- NOTES:
- 1) MATERIAL: MAKE -1 BEND DETAIL FROM -3 PILOT HOLE DETAIL
 - 2) FINISH: N/A
 - 3) TOLERANCES: PER DART OSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK: SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) BREAK: RADIUS: IDENTIFY AT FINAL ASSEMBLY
 - 7) WEIGHT: N/A
 - 8) DAMAGE TOLERANCE ON FWD BEND: THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.6 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020" DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.100" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.

DESIGN	RF	WK	REV. E
DRAWN	RF	WK	DART AEROSPACE USA, INC.
CHECKED	RF	WK	EUGENE, OR
MFG. APPR.	DO	DO	DRAWING NO. D3887
APPROVED	HS	HS	TITLE A119 STD SKIDTUBE ASSY
DE APPR.	DS	DS	SHEET 10 OF 11
DATE	17.02.03		SCALE NTS

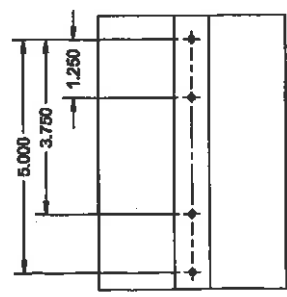
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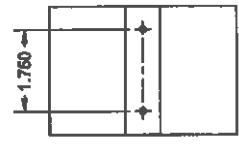
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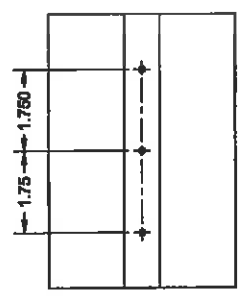
▲ D3887-3 PILOT HOLE DETAIL SKIDTUBE



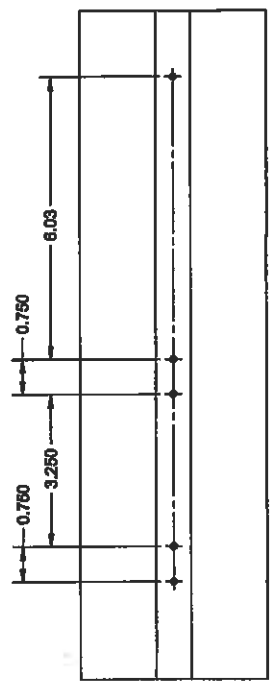
**DETAIL V
SCALE 4X
2 PL**



**DETAIL W
SCALE 4X**



**DETAIL X
SCALE 4X**



**DETAIL Y
SCALE 4X**

- NOTES:**
1) MATERIAL: MAKE FROM D2500-1-180 EXTRUSION
2) FINISH: N/A
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: IDENTIFY AT FINAL ASSEMBLY
7) WEIGHT: N/A

RELEASED
R 2017-05-08

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DESIGN	RF	DART AEROSPACE USA, INC.		
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